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## WATER TERMINALS IN THE UNITED STATES AND THEIR CONTROL

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The most striking feature of the water terminals of the United States is their present inadequacy and inefficiency. Examination of the many reports of harbor improvement associations and the various commissions on port development shows general agreement as to the need of more and better terminal facilities. An inspection of the water fronts of New York, Philadelphia, Boston, New Orleans, Baltimore and Seattle, and other sea and lake and river harbors discloses a surprising failure to utilize the frontage naturally available for landing cargo, piers and wharves too short or too narrow to accommodate the vessels that might come, and insufficient handling machinery. The most comprehensive study of port terminals yet made, presented in the report of the *Bureau of Corporations on Water Terminals*, in 1910, showed that the inadequacy complained of by individual ports is rather general, and tends to prevent a proper development of the water traffic which should naturally add to the commercial prestige of many an American port. The National Waterways Commission emphasized the same needs of harbor development; and the Committee on the Merchant Marine and Fisheries after extensive hearings, has urged that terminals should be made available to all water carriers on equal terms, and that federal aid for the improvement of harbors should be granted only where efficient dock facilities are so available.

There are several causes for the existing lack of proper terminals. Failure properly to organize the functions of the harbor is one cause, the commercial or "transshipping" service not being differentiated from the "industrial" service which involves both local manufacturing and shipping. In the first instance, the terminal acts as a gateway through which should flow freely the tide of incoming and outgoing merchandise; for this service, it is not necessary to occupy central wharves or congested city water frontage. Just as through rail freight is now moved *around* many of our cities by cut-offs and short

lines, so the through traffic from water to rail or rail to water should be handled on piers at some distance from the active center of the city. The second function of the port relates to prompt and easy access to water by manufacturing concerns located in the port city, in order to enable their products to move to destination with the fewest possible handlings. The local transfer of freight and passengers is an additional function which plays an important part at several of the larger harbors. In a proper scheme of harbor organization, attention should be given to these distinct needs, and city planning should include a study of how best to develop the water frontage, to serve all the interests involved.

*Types of Harbors.*—American seaports have either a bay harbor or a river harbor, the one type frequently merging into the other. New York, Boston, Baltimore, Galveston, San Francisco and Seattle are bay harbors; Philadelphia, New Orleans, Portland, Oregon, river harbors. Piers jutting out toward the channel characterize the former; wharves along the shore, the latter, although Philadelphia has projecting piers. The harbors of the Great Lakes consist of an outer harbor and an inner harbor, the outer harbor undeveloped for the most part, as yet; the inner harbor usually of the river type. There are also extending piers, however, at Duluth and Cleveland. River ports such as Pittsburg, Louisville, Memphis, and Cairo have sloping landings, usually paved, off which lie "wharf boats," which are floating wharf sheds, rising and falling as the height of the river varies, and connected with the paved bank by a gangway.

*Lack of Coöperation between Federal and Local Authorities as to Harbor Improvement.*—There has been and is still a marked lack of coöperation between local harbor authorities and the federal government. The first step in the improvement of a harbor is a survey of the channel and its dredging to a depth which enables deep-water vessels to enter the port. This is done by the national government and upon its completion the duties of that authority cease. A further task remains of seeing that proper wharves are provided at which the vessels that enter may discharge their cargo; that traveling cranes are provided for the speedy handling of such cargo; that storage sheds are furnished; that belt lines connect all piers and wharves with all railroads. These have been neglected. Except in rare instances the cities have not felt the responsibility for providing these facilities, and the government engineers have been allowed to complete their work without effort by the municipality or the state to solve the rest of

the terminal problem. San Francisco and New Orleans are exceptions, but in those cases state or city ownership and operation of the wharves have made easy that general control so necessary to carry to completion large undertakings in which many interests are involved.

*Failure fully to Utilize Harbor Frontage.*—At many ports only a small part of the harbor frontage is utilized for water shipping. Some of it is occupied by industries which make no adequate use of the water frontage, as at Cleveland, Buffalo, Chicago, Milwaukee and Pittsburg. Much of it is held by railroad companies, or occupied by tracks or held unused, as at St. Louis, Chicago and Buffalo. In these instances there are not enough wharves because the available land adjacent to water is not used for the purpose to which it is best adapted. This is partly due to the fact that not until recently has the necessity appeared of utilizing all the water frontage for water traffic; partly, to the great demand in the past for land for industrial and railroad purposes.

*Lack of Coördination of Rail and Water Terminal Facilities.*—The failure to link rail and water traffic together is more marked at many of our river and lake ports than at those of the Atlantic coast; but at few points is there adequate coördination of rail and water terminals.

At St. Louis, Cincinnati and Louisville, for example, railroad tracks run close along the paved wharf, but no adequate system of easy transfer from river steamboat to freight car has been arranged, and interchange of traffic is difficult, except that a suggestion of what might be done, in the way of water-rail transfer, is offered by the incline of the Terminal Railroad of St. Louis, where the rails run down close to the water's edge and barge or steamboat may unload cross-ties or other heavy freight directly into the freight cars.

To tie together properly rail with water or lake or ocean traffic requires in substantially all cases a belt line railroad at each port, as well as efficient machinery for effecting transfers. At some ports such a belt line does not exist; at others, its control is such as to favor the railroads and to discourage shipments by water lines, or when controlled by a particular railroad, to discriminate against water lines not controlled by the dominant railroad. In the port of New York, the absence of a belt line, due to the unique character of the harbor and the practical difficulty in the way of providing such a line for Manhattan Island, is probably not so serious as at other ports. The partial belt line in Philadelphia is inadequate. New Orleans has a good belt railroad 20 miles long, with tracks to manufacturing plants

and warehouses, connecting all the trunk lines entering the city with all the principal river wharves and many industries. This belt line is operated by a public body, the municipal belt railroad commission, while the wharves are built and maintained by another public body, the state board of commissioners of the port of New Orleans. Such public ownership and management has been found helpful in preventing railroad control of the terminal situation. It "gives to the municipality the control over freight transfers and means equal treatment to all shippers," said the Commissioner of Corporations in the report previously referred to.

San Francisco has a publicly-owned railroad, operated by the state board of harbor commissioners, connecting with the tracks of manufacturers and trunk lines. At Buffalo there is a privately-owned belt line leased by one of the railroad companies.

Chicago has a number of belt and switching railroads, including several at South Chicago and along the Calumet River, but there is no single unified and adequate belt line system.

What can be accomplished by a thorough plan of coördinated water-and-rail terminals may be judged somewhat from the Bush Terminal in Brooklyn, where piers, switching tracks, storage sheds and manufacturing structures have all been located in the same vicinity and are operated as part of a single system. To these 1300-foot piers may come the largest ocean steamers, unload from all hatches at once, quickly receive their return cargoes and make way for other vessels. Back of the piers are warehouses, where there is ample room to store in-coming and out-going freight; close at hand are switch tracks where hundreds of freight cars may be held or switched; and behind them are manufacturing buildings, the products of which may be readily transferred to pier and vessel hold. The efficient terminal unit, for industrial purposes, is undoubtedly a combination of factory, freight tracks and pier. The Bush Terminal has been called the only modern port terminal in the United States. One or two similar developments are already being planned for the harbor of New York.

*Control of Water Frontage by Railroads.*—A large share of the most available water frontage of our ports is, at present, controlled by railroads. While it is essential that there should be portions of harbors occupied by railroads for tracks and switching yards, in order to make successful transshipment from water to rail, it is doubtful whether railroads should be permitted to own or control so large a share of the water frontage as they now have in some cities. Such ownership

may prevent the development, for pier purposes, of the land bordering the harbor. It may discourage water traffic by high charges for the lease of water frontage; it may afford unequal facilities to water carriers affiliated with railroads or with some particular railroad. In New York harbor, for example, below West Sixtieth street, on the Hudson River, railroads occupy more than 30 piers for freight purposes, besides those for their many ferries. All the space along the river from West 60th street to 72d street is occupied by a single railroad company. Many of the East River piers are occupied by railroads. Though the city of New York owns a large portion of the river frontage on both rivers, its system of long-term leases has resulted in a considerable degree of control by the lessees. Almost the entire active water front of Jersey City is occupied, and most of it is owned, by railroads.

A large section of the harbor fronts at Boston, Philadelphia, Baltimore and Norfolk is owned or substantially controlled by railroads. At Pittsburg, 10 miles of river frontage is similarly controlled. "Manufacturing plants, and especially railroads along the banks of the river," stated the report of the United States Chief of Engineers, as far back as 1903, "have rendered useless for general harborage purposes a large portion of the harbor" (of Pittsburg.) Much of the river port is occupied by railroad tracks and filled in steeply to the water's edge, precluding any possible use of the frontage for steamer landings. At Louisville a railroad runs for several blocks along the banks so closely to the river for part of the distance beyond the paved wharf that it would be impossible to use the shore for unloading cargoes. At Cincinnati, a railroad attempted to build its viaduct across the public wharf, in order to connect its bridge across the river with its new terminal station, and the completion of the trestle was prevented only by the united protest of the citizens of Cincinnati, that the viaduct would effectively obstruct the use of the public landing. At St. Louis, railroad tracks occupy the river front for five miles; at East St. Louis, the entire river frontage. Railroad tracks at Memphis run along the wharf for a considerable distance. At Seattle, and Portland, Oregon, railroads control or own a large share of the best harbor frontage.

In fairness to the railroads it must be said that in many cities the reason for the railroad occupying water or river shore was convenience and ease of grading rather than any intention to obstruct water front development. On the other hand it is only proper at a

time when account is being taken of the available public resources, to understand fully the extent of control by railroads, or by water lines controlled by railroads, in order to determine what should be the proper policy of our cities in the future.

*Unloading Machinery.*—It is not possible within the small space here available to present any adequate discussion of the loading and unloading machinery now in use at American ports. Suffice it to say that at the harbors on the Great Lakes, machinery for handling ore and coal and grain is in use and permits the transfer of bulk cargoes expeditiously. There are also good coal handling facilities at several points on the Mississippi River. The absence of mechanical conveniences for the swift and easy handling of bulk and package freight at Atlantic and Gulf ports is very marked, and particularly surprising at New York.

*Terminal Charges.*—The relation to traffic terminals of terminal charges, wharfage, dockage, towage, lighterage and other charges, also cannot be treated here. The topic does not lend itself readily to generalization. These charges are of many kinds and descriptions, and differ greatly at various ports. It can be said only that further scientific study is needed to determine what sort of terminal charges should be imposed and how high or how low they may be placed without discouraging the passage of goods through the ports.

*Transportation a Unit; Necessity of Public Control.*—As water traffic increases in volume and the need for terminal facilities becomes more urgent, it must be increasingly evident that all the elements in transportation—steam roads, electric railways and water lines—are part of one transportation whole—the unit being not railroads alone, nor water carriers only, but all together as a single system of freight and passenger transport. It is a question how far competition between rail and water lines should be depended on to provide proper rates and service. There is much discussion whether it would not be of advantage for state or city to own all water terminals, thus insuring equal treatment to all vessel or steamboat carriers. Public control is clearly necessary to prevent discriminations; whether or not public ownership will be required, remains to be seen. Unity of operation of all transportation—the coordination of rail and water transport facilities—and public control of such unified transportation, are two of the needs of the present, concerning which there is almost no difference of opinion.